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EXAMINER

ARANCIBIA, MAUREEN GRAMAGLIA

ART UNIT PAPER NUMBER

1763

DATE MAILED: 07/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/789,660

Applicant(s)

PAN ET AL.

Examiner

Maureen G. Arancibia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because in Figure 3, the word "DE-GASSING" is misspelled in box 3a, and the word "DEPOSIT" is misspelled in boxes 5a and 6a.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**3. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.**

**Patent 6,310,755 to Kholodenko et al.**

In regards to Claim 1, Kholodenko et al. teaches a plasma processing apparatus (Figure 1), comprising a chamber 25 with an interior (Figure 1); a wafer heating apparatus 55 that comprises a heater 235 (Column 9, Lines 54-55) and supports a wafer 30; and a source RF power supply (upper right hand corner of Figure 1; Column 4, Lines 5-11).

Note that the preamble recitation of intended use of the claimed apparatus as a pre-clean chamber has been considered, but does not have patentable weight. See MPEP § 2111.02. The apparatus taught by Kholodenko et al. would be capable of performing such a pre-cleaning process.

The apparatus disclosed by Kholodenko et al. would further be capable of heating a wafer comprising a trench and via sidewalls etched in a dielectric layer thereon, for pre-cleaning the trench and the via sidewalls of the wafer prior to the disposition of a layer thereon. This rejection is based on the fact the apparatus structure taught above has the inherent capability of being used in the manner intended by the Applicant. When a rejection is based on inherency, a rejection under 35 U.S.C. 102 or U.S.C. 103 is appropriate. (See *In re Fitzgerald* 205 USPQ 594 or MPEP 2112).

Furthermore, it has been held that inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

In regards to Claim 2, the apparatus taught by Kholodenko et al. further comprises a temperature controller 275.

In regards to Claim 3, the apparatus taught by Kholodenko et al. further comprises a bias RF power supply 145 (Column 4, Lines 41-45) connected to the wafer heating apparatus. (Figure 1)

In regards to Claim 4, see the discussion of Claim 2.

In regards to Claim 5, the wafer heating apparatus 55 taught by Kholodenko et al. is an electrostatic chuck (Column 4, Line 12), and is employed at high temperatures of up to 500 degrees C (Column 10, Lines 54-58). Note that the recitation of a "high-temperature electrostatic chuck" in Claim 5 has been interpreted in light of the Specification, which indicates that the chuck is to be used in temperatures greater than 200 degrees C. (Paragraph 12)

Note that the preamble recitation of intended use of the claimed apparatus as a pre-clean chamber. See MPEP § 2111.02. The apparatus taught by Kholodenko et al. would be capable of performing such a pre-cleaning process.

The apparatus disclosed by Kholodenko et al. would further be capable of heating a wafer comprising a trench and via sidewalls etched in a dielectric layer thereon, for pre-cleaning the trench and the via sidewalls of the wafer prior to the

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disposition of a layer thereon. This rejection is based on the fact the apparatus structure taught above has the inherent capability of being used in the manner intended by the Applicant. When a rejection is based on inherency, a rejection under 35 U.S.C. 102 or U.S.C. 103 is appropriate. (See *In re Fitzgerald* 205 USPQ 594 or MPEP 2112).

Furthermore, it has been held that inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

In regards to Claim 6, see the discussion of Claim 2.

In regards to Claim 7, see the discussion of Claim 3.

In regards to Claim 8, see the discussion of Claim 2.

**4. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,634,177 to Lin et al.**

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

In regards to Claim 1, Lin et al. teaches a plasma processing apparatus (Figure 3), comprising a chamber 20 with an interior (Figure 3); a wafer heating apparatus 28

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that comprises a heat exchanger 62,64 and heated heat exchanging medium (Column 7, Lines 20-22 and 30-32) and supports a wafer 14; and a source RF power supply 22.

Note that the preamble recitation of intended use of the claimed apparatus as a pre-clean chamber has been considered, but does not have patentable weight. See MPEP § 2111.02. The apparatus taught by Lin et al. would be capable of performing such a pre-cleaning process.

The apparatus disclosed by Lin et al. would further be capable of heating a wafer comprising a trench and via sidewalls etched in a dielectric layer thereon, for pre-cleaning the trench and the via sidewalls of the wafer prior to the disposition of a layer thereon. This rejection is based on the fact the apparatus structure taught above has the inherent capability of being used in the manner intended by the Applicant. When a rejection is based on inherency, a rejection under 35 U.S.C. 102 or U.S.C. 103 is appropriate. (See *In re Fitzgerald* 205 USPQ 594 or MPEP 2112).

Furthermore, it has been held that inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

In regards to Claim 2, Lin et al. also teaches a temperature controller 66 (Column 7, Lines 22-30).

In regards to Claim 3, Lin et al. also teaches a bias RF power supply 24 connected to the wafer heating apparatus (Figure 3).

In regards to Claim 4, see the discussion of Claim 2.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 5-8 rejected under 35 U.S.C. 103(a) as being obvious over Lin et al. in view of Kholodenko et al.**

The applied reference of Lin et al. has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned



by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

The teachings of Lin et al. were discussed above.

In regards to Claim 5, Lin et al. teaches that the wafer heating apparatus 28 is an electrostatic chuck. (Column 7, Lines 15-16).

Lin et al. does not expressly disclose that the electrostatic chuck can be a high-temperature electrostatic chuck.

Kholodenko et al. teaches an electrostatic chuck 55 (Column 4, Line 12) that is employed at high temperatures of up to 500 degrees C (Column 10, Lines 54-58). Note that the recitation of a "high-temperature electrostatic chuck" in Claim 5 has been interpreted in light of the Specification, which indicates that the chuck is to be used in temperatures greater than 200 degrees C. (Paragraph 12)

It would have been obvious to one of ordinary skill in the art to use an electrostatic chuck that could withstand high temperatures, as taught by Kholodenko et al., in the apparatus taught by Lin et al. The motivation for doing so, as taught by Kholodenko et al. (Column 18, Lines 1-4), would have been to use a chuck that could rapidly heat the substrate without fracturing or microcracking from thermal expansion stress.

Note that the preamble recitation of intended use of the claimed apparatus as a pre-clean chamber has been considered, but does not have patentable weight. See MPEP § 2111.02. The apparatus taught by Lin et al. and Kholodenko et al. would be capable of performing such a pre-cleaning process.

The apparatus disclosed by Lin et al. and Kholodenko et al. would further be capable of heating a wafer comprising a trench and via sidewalls etched in a dielectric layer thereon, for pre-cleaning the trench and the via sidewalls of the wafer prior to the disposition of a layer thereon. This rejection is based on the fact the apparatus structure taught above has the inherent capability of being used in the manner intended by the Applicant. When a rejection is based on inherency, a rejection under 35 U.S.C. 102 or U.S.C. 103 is appropriate. (See *In re Fitzgerald* 205 USPQ 594 or MPEP 2112).

Furthermore, it has been held that inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

In regards to Claim 6, see the discussion above of Claim 2.

In regards to Claim 7, see the discussion above of Claim 3.

In regards to Claim 8, see the discussion above of Claim 2.

**7. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,602,793 to Masterson in view of Kholodenko et al.**

In regards to Claim 1, Masterson teaches a plasma pre-clean apparatus (Figure 5), comprising a chamber 500 with an interior (Figure 5); a pedestal 508 supporting a wafer W; and a source RF power supply engaging the chamber (Column 5, Lines 1-3).

Masterson does not expressly teach that the wafer can be supported by a wafer heating apparatus.

Kholodenko et al. teaches a plasma processing apparatus (Figure 1), comprising a wafer heating apparatus 55 that includes a heater 235 (Column 9, Lines 54-55) and supports a wafer 30.

It would have been obvious to one of ordinary skill in the art to modify the apparatus taught by Masterson to use a wafer heating apparatus to support the substrate. The motivation for doing so, as taught by Kholodenko et al. (Column 10, Lines 38-44), would have been to maintain the wafer at a temperature suitable for processing.

Note that the preamble recitation of intended use of the claimed apparatus as a pre-clean chamber has been considered, but does not have patentable weight. See MPEP § 2111.02. The apparatus taught by Masterson and Kholodenko et al. would be capable of performing such a pre-cleaning process.

The apparatus disclosed by Masterson and Kholodenko et al. would further be capable of heating a wafer comprising a trench and via sidewalls etched in a dielectric layer thereon, for pre-cleaning the trench and the via sidewalls of the wafer prior to the disposition of a layer thereon. This rejection is based on the fact the apparatus structure taught above has the inherent capability of being used in the manner intended by the Applicant. When a rejection is based on inherency, a rejection under 35 U.S.C. 102 or U.S.C. 103 is appropriate. (See *In re Fitzgerald* 205 USPQ 594 or MPEP 2112).

Furthermore, it has been held that inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*,

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75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

In regards to Claim 2, the combination of Masterson and Kholodenko et al. as applied to Claim 1 does not expressly teach a temperature controller.

However, Kholodenko et al. further teaches a temperature controller 275.

It would have been obvious to one of ordinary skill in the art to further modify the combination of Masterson and Kholodenko et al. as applied to Claim 1 to include a temperature controller. The motivation for doing so, as taught by Kholodenko et al. (Column 10, Lines 49-54), would have been to allow the wafer heating apparatus to be controlled to maintain the substrate within a narrow temperature range.

In regards to Claim 3, Masterson teaches there should be a bias RF power supply connected to the wafer support. (Column 4, Lines 39-42)

In regards to Claim 4, see the discussion of Claim 2.

In regards to Claim 5, the combination of Masterson and Kholodenko discussed in regards to Claim 1 meets all of the limitations of Claim 5, except that the wafer heating apparatus should be a high-temperature electrostatic chuck.

However, Kholodenko et al. further teaches that the wafer heating apparatus 55 is an electrostatic chuck (Column 4, Line 12), and is employed at high temperatures of up to 500 degrees C (Column 10, Lines 54-58). Note that the recitation of a "high-temperature electrostatic chuck" in Claim 5 has been interpreted in light of the Specification, which indicates that the chuck is to be used in temperatures greater than 200 degrees C. (Paragraph 12)

It would have been obvious to one of ordinary skill in the art to further modify the combination of Masterson and Kholodenko discussed in regards to Claim 1 to make the wafer heating apparatus be a high-temperature electrostatic chuck. The motivation for doing so, as taught by Kholodenko et al. (Column 18, Lines 1-4), would have been to use a wafer heating apparatus that could rapidly heat the substrate without fracturing or microcracking from thermal expansion stress.

Note that the preamble recitation of intended use of the claimed apparatus as a pre-clean chamber has been considered, but does not have patentable weight. See MPEP § 2111.02. The apparatus taught by Masterson and Kholodenko et al. would be capable of performing such a pre-cleaning process.

The apparatus disclosed by Masterson and Kholodenko et al. would further be capable of heating a wafer comprising a trench and via sidewalls etched in a dielectric layer thereon, for pre-cleaning the trench and the via sidewalls of the wafer prior to the disposition of a layer thereon. This rejection is based on the fact the apparatus structure taught above has the inherent capability of being used in the manner intended by the Applicant. When a rejection is based on inherency, a rejection under 35 U.S.C. 102 or U.S.C. 103 is appropriate. (See *In re Fitzgerald* 205 USPQ 594 or MPEP 2112).

Furthermore, it has been held that inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

In regards to Claim 6, see the discussion of Claim 2.

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In regards to Claim 7, see the discussion of Claim 3.

In regards to Claim 8, see the discussion of Claim 2.

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**9. Claims 1-8 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 2 and 3 of U.S. Patent No. 6,634,177 ('177) in view of U.S. Patent 6,310,755 to Kholodenko et al.**

In regards to Claim 1 of the instant application, Claim 3 of '177 recites a wafer heating apparatus for supporting a wafer, comprising a platform (Line 3 of Claim 1, on which Claim 3 depends), a heat exchanger (Line 4 of Claim 1), and a heated heat exchange medium (Claim 3).

Claim 3 of '177 does not expressly recite that said heating apparatus is part of a processing chamber further comprising a chamber and a source RF power supply.

Kholodenko et al. teaches that a heating apparatus 55 can be used in a plasma processing apparatus (Figure 1), comprising a chamber 25 with an interior (Figure 1) and a source RF power supply (upper right hand corner of Figure 1; Column 4, Lines 5-11).

It would have been obvious to one of ordinary skill in the art to use the wafer heating apparatus recited in Claim 3 of '177 in the plasma processing apparatus taught by Kholodenko et al. The motivation for doing so would have been to perform plasma processing on the wafer supported by the wafer heating apparatus.

Note that the preamble recitation of intended use of the claimed apparatus as a pre-clean chamber has been considered, but does not have patentable weight. See MPEP § 2111.02. The apparatus taught by Claim 3 of '177 and Kholodenko et al. would be capable of performing such a pre-cleaning process.

The apparatus disclosed by Claim 3 of '177 and Kholodenko et al. would further be capable of heating a wafer comprising a trench and via sidewalls etched in a dielectric layer thereon, for pre-cleaning the trench and the via sidewalls of the wafer prior to the disposition of a layer thereon. This rejection is based on the fact the apparatus structure taught above has the inherent capability of being used in the manner intended by the Applicant. When a rejection is based on inherency, a rejection under 35 U.S.C. 102 or U.S.C. 103 is appropriate. (See *In re Fitzgerald* 205 USPQ 594 or MPEP 2112).

Furthermore, it has been held that inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*,

75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

In regards to Claim 2 of the instant application, Claim 3 of '177 recites a temperature controller (Line 9 of Claim 1).

In regards to Claim 3 of the instant application, Claim 3 of '177 as modified by Kholodenko et al. does not expressly recite a bias RF power supply connected to the wafer heating apparatus.

However, the apparatus taught by Kholodenko et al. further comprises a bias RF power supply 145 (Column 4, Lines 41-45) connected to the wafer heating apparatus. (Figure 1)

It would have been obvious to one of ordinary skill in the art to further modify the combination of Claim 3 of '177 and Kholodenko et al. as applied to Claim 1 to include a bias RF power supply connected to the wafer heating apparatus. The motivation for doing so, as taught by Kholodenko et al. (Column 4, Lines 42-45), would have been to accelerate the plasma species towards the wafer supported by the wafer heating apparatus.

In regards to Claim 4, see the discussion of Claim 2.

In regards to Claim 5, see the discussion of Claim 1. Claim 2 of '177 further recites that the platform is an electrostatic chuck.

Claim 2 of '177 does not expressly recite that the electrostatic chuck can be a high-temperature electrostatic chuck.



Kholodenko et al. teaches an electrostatic chuck 55 (Column 4, Line 12) that is employed at high temperatures of up to 500 degrees C (Column 10, Lines 54-58). Note that the recitation of a "high-temperature electrostatic chuck" in Claim 5 has been interpreted in light of the Specification, which indicates that the chuck is to be used in temperatures greater than 200 degrees C. (Paragraph 12)

It would have been obvious to one of ordinary skill in the art to use an electrostatic chuck that could withstand high temperatures, as taught by Kholodenko et al., in the apparatus taught by the combination of Claims 2 and 3 of '177 and Kholodenko et al. discussed above. The motivation for doing so, as taught by Kholodenko et al. (Column 18, Lines 1-4), would have been to use a chuck that could rapidly heat the substrate without fracturing or microcracking from thermal expansion stress.

Note that the preamble recitation of intended use of the claimed apparatus as a pre-clean chamber has been considered, but does not have patentable weight. See MPEP § 2111.02. The apparatus taught by Claims 2 and 3 of '177 and Kholodenko et al. would be capable of performing such a pre-cleaning process.

The apparatus disclosed by Claims 2 and 3 of '177 and Kholodenko et al. would further be capable of heating a wafer comprising a trench and via sidewalls etched in a dielectric layer thereon, for pre-cleaning the trench and the via sidewalls of the wafer prior to the disposition of a layer thereon. This rejection is based on the fact the apparatus structure taught above has the inherent capability of being used in the manner intended by the Applicant. When a rejection is based on inherency, a rejection

under 35 U.S.C. 102 or U.S.C. 103 is appropriate. (See *In re Fitzgerald* 205 USPQ 594 or MPEP 2112).

Furthermore, it has been held that inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

In regards to Claim 6, see the discussion of Claim 2.

In regards to Claim 7, see the discussion of Claim 3.

In regards to Claim 8, see the discussion of Claim 2.

### ***Response to Arguments***

Applicant's arguments filed 27 June 2005 have been fully considered but they are not persuasive.

In response to applicant's argument that none of Kholodenko et al., Lin et al., Masterson, and Claims 2 and 3 of '177 teach that the apparatus is used "for supporting and heating a wafer, comprising a trench and via sidewalls etched in a dielectric layer thereon, for pre-cleaning the trench and via sidewalls of the wafer prior to disposition of a layer thereon," a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963).

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Moreover, it has been held that inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims. *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

### ***Conclusion***

10. Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

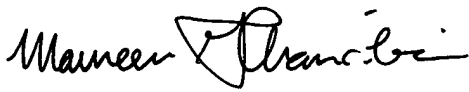
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen G. Arancibia whose telephone number is (571) 272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Maureen G. Arancibia  
Patent Examiner, AU 1763



**PARVIZ HASSANZADEH**  
**SUPERVISORY PATENT EXAMINER**